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# JACOBI. (MARY PUTNAM.)

## SPECIALISM IN MEDICINE

BY

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## SPECIALISM IN MEDICINE

BY MARY PUTNAM JACOBI, M.D.

We propose to consider briefly, but critically, the following proposition, which, though not distinctly formulated, is, as it were, held in solution in many others now current, and may be easily precipitated from them.

At the present day medical science has expanded to such an extent that its intelligent cultivation as a whole by any one person has become impossible. The practice of medicine, therefore, to the extent to which it may reach any really high standard of excellence, must henceforth be carried on exclusively by specialists.<sup>1</sup>

Thus, the physician, who should, in chimerical imitation of Lord Bacon, propose to "take all (medical) knowledge for his portion," must, on this theory, be consigned to a limbo of worn-out inanities. Nevertheless, the most useful functions of specialists are still exercised with tacit reference to the intelligent practitioner, who is compelled, not indeed to know all about all medicine, but to hold the key of admission to any of its branches, of which, at any moment, he may have practical need.

Thus, specialists are justly expected to become the depositaries of special literature, and to so sift, handle, classify, and arrange

<sup>1</sup> \* \* \* "The fact, the hard and undeniable fact, that all intelligent and scientific physicians are quasi-specialists, and must be. In the present development of medical science there is no alternative; a physician must be a quasi-specialist, or possess a universal knowledge of a superficial, mostly booky kind,—a knowledge wholly insufficient to insure intelligent or successful practice."—E. C. Seguin, these ARCHIVES, April, 1881, p. 186.

this, that it become accessible to, and utilizable by the general practitioner. By reiterated experience, they are expected to acquire an exceptional familiarity with certain types of disease, so as to be better able to decide in rare, obscure, or unusually difficult cases, when the physician shall call them in. By continued application they may tend to indefinite improvement in the technique of diagnosis and of treatment. Finally, in regard to the state of medical knowledge on any given question at a given moment, they may furnish the standards with which the knowledge and practice of the general physician must constantly be compared and tested. Thus, specialism is largely useful in furnishing the *exact* material with which the general physician may make his practical combinations. In his absence, and from the languid interest which specialists profess in each other's departments, this combination would often not be effected. But the problem offered by a sick person is always a problem of combination. The practical specialist does not analyze, but roughly divides this problem according to considerations frequently artificial. The scientific specialist abstracts phenomena completely; studies separately, anatomical, physiological, chemical, pathological conditions. It is the ideal business of the physician to take conditions which science has abstracted for the purpose of thought, and to recombine them for the purposes of life. In the absence of the physician there would be no one to do this; with every new deterioration of the ideal character of the general physician, this work of combination is less and less well done. As a consequence, every sick person who can pay for it begins to expect to divide up his body among a cluster of "eminent specialists" before any positive diagnosis of his case can be reached.

Notwithstanding the inconvenience and expense of this procedure, it tends to gain in popularity on account of the simplicity and apparent common-sense of its theory. The laity are very ready to infer not only that specialism is good, but that the more of it the better. If the physician who treats six diseases is necessarily superior to him who is willing to manage sixty, then he who confines himself to one must be the best of all. Hence the

popularity of the pile doctor, and the cancer doctor, *et hoc genus omne.*

The great principle of unity in diversity, whose research is the problem of philosophy, is also the animating principle of philosophical medicine. But this cannot be appreciated by persons who are neither physicians nor philosophers.

The complete theory of practical specialism admits that a man may be a shining light in a subject "which interests him," yet a perfect idiot in another of equal importance to the patient. Now, the initial problem of diagnosis is the decision of the department to which the case belongs ; and, on the above theory, the fate of the patient must be a matter of chance. If his case happen to fall on the competent side of the doctor he consults, well and good ; but if not, it must fail of recognition. No fixed value can be attached to any symptom, when it is remembered that the lines of disease intersect each other in every direction.

Thus, does a young girl fall into a melancholy ? The question would arise : Shall she be at once entrusted to the gynecologist on the suspicion of uterine disease, or to a haematologist for chloranæmia, or to the superintendent of an asylum as a case of incipient insanity, or to a friend of the family to bring about a thwarted project of marriage ? If a woman has a pain in her back, how many physicians must be consulted before deciding whether this be due to muscular denutrition, or to uterine displacement, or to chronic nephritis, or incipient myelitis, or to commencing caries of the vertebra, or merely to hysteria ? When a typhoid fever simulates general tuberculosis, or the reverse, should the diagnosis be made by the heart and lung specialist, or by the fever doctor ? When a man falls down in an apoplexy, does his case belong to the neurologist, or to the specialist in diseases of the heart whence an embolus may have been carried, or to the practitioner devoted to gout and atheroma ? Shall a children's doctor decline to perform an urgent tracheotomy because he is not a surgeon ? or shall a physician tolerate irreparable delay in reducing a dislocation for the same reason ?<sup>1</sup>

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<sup>1</sup> We have within a few weeks seen two cases of irreparable injury caused by

It is sometimes said that the conscientious specialist will be sufficiently trained in general pathology to recognize when a subject lies beyond his domain, and he will then, "in justice to his patient," hand him over to one of his own "eminent colleagues."

Dr. Barnes, who, of all gynecological specialists, most frequently deprecates specialism, thus illustrates the case: "A woman comes to him complaining of pruritus. Much to her astonishment, he examines her urine, because he retains enough knowledge of general pathology to know that pruritus may indicate diabetes. Finding sugar, he at once resigns the case and sends her elsewhere." This illustration represents a class of cases which do often occur, and where the specialist is really both competent and conscientious the case may be managed without further inconvenience to the patient than that of a double consultation. But—and this is a practical inconvenience of perhaps a low order for mention here—there is certainly no more, but rather less, guarantee for the honor of a specialist than of a general practitioner. The last is expected to take charge of the patient whatever may prove to be the matter with him. His interest, therefore, in ascertaining the exact state of things is identical with that of the patient. But the specialist knows he will only be entrusted with the case if he can prove that it falls within the limits of his own specialty. He is therefore always under a strong temptation to "make out a case," and for this purpose, if necessary, to rather avoid than to seek close scrutiny of the surroundings.

We hasten to recognize the fact that there are many specialists of honor as high and unsullied as could be claimed for the most upright physician. But we think the existence of the special temptation we have referred to can hardly be doubted, nor that this temptation is by no means always resisted. Apart from this purely practical consideration, it is to be remembered that such definite grounds of classification are more often absent than present; the specialist confronts the theoretical difficulty of not being quite sure what he is to exclude.

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just this fact, and by the prolonged application of poultices instead of prompt operative interference.

Another important inconvenience in the tendency to universal specialism is that the beginnings of disease are so often likely to escape detection. To consult a specialist, the patient will first wait until he is pretty sure he has the specialist's disease ; thus, he must wait until this is rather well developed. Thus, too often no attempt is made to treat a chronic disease until it has become almost incurable, nor to make the precise diagnosis of an acute disorder until it has nearly killed the patient.

But the collapse into inefficiency of a general practitioner is not an adequate basis upon which to develop an accomplished specialist. Instead of either the one or the other, we obtain a confused, vague, cheerfully optimistic "family doctor," who relieves himself of responsibility for one organ in his patient's body after another on the ground that it belongs to some "specialist," who, as long as symptoms are not importunate, declares that they will "pass away of themselves,"—instinctively dreading the recognition of their importance as the signal for a surrender of the case. Thus, epitheliomas are allowed to extend until they are ineradicable, and chronic pneumonia to eat out caverns in lung tissue unsuspected, and the child to limp from habit into a suppurating coxitis, and the melancholic to commit suicide while sent on a journey for change of scene.

In addition to the functions which may be unquestionably fulfilled by specialists with great advantage to the community at large, other claims are often advanced of, we believe, less validity. Thus, it is said :

1. That to specialists alone, or chiefly, is due not only the improvement of technique, but the discovery of the fundamental ideas which change the face of science.
2. That specialists are habitually engaged in life-long researches in the subjects of their specialty.
3. That, thus, the patients of a specialist must profit much more by his intellectual activity than can the patients of a general practitioner by his.
4. That, whereas a general practitioner can only have at best a partial acquaintance with the many diseases he treats, the special-

ist, in virtue of his wise limitation of observation, can know all about his.

5. Finally, that the establishment of specialties alone permits the accumulation of clinical material in definite and available masses.

The first claim might be contested *a priori* from the consideration of the evident necessities of the case. No idea in a specialty can be as fundamental or as original as that on which the specialty is founded, and this evidently must have been suggested by a non-specialist. Laennec was not a specialist when he practically discovered the principles of auscultation ; his prolonged special application afterward was devoted to the consolidation and simplification and detailed establishment of his theory. Helmholtz was no oculist when he invented the ophthalmoscope ; even his treatise on optics was written later. Czermak was not a specialist when he invented the laryngoscope. Orthopedics, perhaps, dates its modern impulse from the researches in locomotion of the brothers Weber, who were physiologists. The principle of counter-irritation in joint diseases was established by Pott, a general surgeon of London ; the still more important principle of rest was elaborated by Bonnet, a general surgeon of Lyon. The effective introduction into orthopedic surgery of resection was made by Sayre before he became an orthopedist. In gynecology the capital operation of ovariotomy was initiated, as is well known, by McDowell, a general surgeon, having been originally suggested by Hunter, than whom none of the great physicians of the eighteenth century was less of a specialist. It was the great surgeon Velpeau, and the author of a treatise on neuralgia, Valleix, who first called attention to uterine flexions and suggested pessaries. Dr. Sims had hardly become a specialist when he invented his speculum and contrived his operation for vesico-vaginal fistula, achievements which his long career has never enabled him to excel.

Modern dermatology is based upon anatomical researches, which may be, and often are, carried on by histologists who do not practise medicine at all,—hence could not be called practising specialists. The clinical researches of the French school, being con-

ducted according to the theory of diathesis, were not and could not be made by physicians limited in clinical observations of skin diseases. The theory may be discarded ; but the results of the impulse given under its influence remain. In neurology clinical specialism was first suggested by anatomy, and later by physiology. In no practical specialty is modern clinical observation kept more closely to these two fundamental sciences than in this. The principal facts and ideas have come from anatomists or physiologists, or from non-specialists, who have also furnished the chief clinical groupings. Bell's discovery of the double function of the roots of nerves was made in his capacity of anatomist ; his discovery of external facial paralysis, in his capacity of general practitioner. Marshall Hall, Brodie, Abercrombie, Calmeil—even Broussais, with his "*De l' Irritation et de la Folie*,"—and a host of others, who were the early pioneers in this century in the study of nervous diseases, were not specialists, since it was indeed at that time not possible to be one. Nevertheless, many of their observations remain of permanent and fundamental value. The most eminent physiologists, who have contributed to knowledge of nervous diseases far more than have simple clinicians, have not been specialists in the physiology of the nervous system. Magendie, who divides with Bell the honor of the discoveries in the spinal roots of nerves, wrote two volumes on the "*Physics of the Animal Organism*." Bernard is as distinguished for his composite researches in diabetes (to go no further) as for those on the vaso-motor system. Schiff, who distinguished the paths in the cord for different sensory impressions, has written a treatise on digestion. Neither Türck nor Bouchard were practical specialists when they established the fact of descending degenerations ; nor was Waller when he made the famous experiment which has served to explain these morbid processes. Brown-Séquard's researches in epilepsy were made at the very beginning of his career, and not when he had become a specialist. The clinical groups of locomotor ataxia and pseudo-hypertrophic paralysis were established by Duchenne, whose specialty was not nervous diseases, but faradic electricity, and originally, in its application to orthopedics. Ex-

ophthalmic goitre has been discovered by Basedow, a sagacious general practitioner; and the same is true of Addison's disease. Gubler, the first to point out crossed paralysis, was never a specialist; indeed, his essay on the hepatic lesions of hereditary syphilis is as famous as any that he has written. Sir William Gull's and Stanley's observations on paraplegia from renal calculus initiated research into "reflex paraplegia." No one could suppose them to be specialists.

Another class of examples is offered by writers who had become specially identified with neurological practice before publishing the treatises now recognized as authoritative, yet who, before this, had achieved distinction in other directions. Thus, Griesinger's now classical work on psychiatry was preceded by an only less famous treatise on infectious diseases. Leyden, before writing two volumes on diseases of the spinal cord, had published a valuable monograph on icterus. Nothnagel's admirable clinical contributions to the problem of cerebral localization, and his less admirable experiments on the brain, cannot efface recollection of his hand-book of therapeutics—on the whole, the most valuable extant on the subject. Charcot began his studies in neurology by general studies on the diseases of old age. He was stimulated by the practice of no specialty, but simply utilized the neglected pathological materials accummulating in oblivion at the Salpêtrière. Only recently, moreover, Charcot has published a series of lectures on the pathology of the liver and of the kidney; and his description and analysis of the lesions of broncho-pneumonia have thrown new light on a subject supposed to have become hackneyed.

These examples, selected at random, do not of course exclude the clinical discoveries or inventions which have been made by practising specialists, and in a manner which indicates that they were the direct outgrowth of their special clinical experience. In neurology, Westphal's discovery of the tendon reflex symptom; in gynecology, Emmet's operation for lacerated cervix, are typical examples of this class. The fact that Hitzig, whose discoveries on the motor irritability of the cortex have had such an enormous

influence, has been for a long time the superintendent of an insane asylum, is not an example of the influence of practical specialism. His researches were purely physiological, and were suggested by physiological considerations, which clinical observations might confirm, but did not suffice to originate.

We think the cases quoted are sufficient to demonstrate that indefinite repetition of clinical experience is never of itself sufficient to suggest new ideas; that a life-long specialism in no wise predisposes to discoveries, and still less is essential to their achievement; that in a large number of cases, if not the majority, the consecration to a specialty has followed, and not preceded, the discovery which has achieved the reputation of the specialist, and has fascinated him, perhaps for ever, with the subject. But it is always genius which invents; special application can only improve; it then remains for culture to appropriate.

Our limits compel us to be brief with the three remaining propositions. In regard to the second claim, namely, the life-long researches supposed to be carried on by practising specialists, we would call attention to a fact usually overlooked. It is that for every mind, in regard to every subject it studies, there exists a saturation point of suggestiveness, which is not exceeded by enforced prolongations of attention. It is very useful for a person to pursue a subject, so long as it continues to yield him ideas; very useful to practise a technique, until it be sufficiently mastered to meet all difficulties of execution. But afterward there remains no intellectual advantage in persistent adherence to the same line of thought. There are personal, often pecuniary advantages; there is profit gained from an acquired reputation and previous labors. But this, however legitimate, is a very different thing from continued progress in science, or indefinite improvement in care-taking of patients, such as is generally assumed.

Again, the practical specialist does not, fortunately, often select only one disease, but one organ, or presumably associated group of organs. Now cases of the same disease in different organs are apt to present many more points of resemblance than do cases of different diseases in the same organ. There is much more analogy

between uterine cancer and epithelioma of the lip than between uterine cancer and uterine flexions. The study of the pelvic curves throws no light on embryology, although both subjects are assigned to the obstetrician. Uræmic peritonitis is better understood by study of septic peritonitis than of renal calculus. Epilepsy has much less resemblance to the systemic forms of myelitis than to the eclampsia induced by acute hemorrhages, and so on.

Practical specialism only enforces attention to clinical observation : analysis of this, on the basis of any special science, is as optional with the specialist as with the general practitioner, and as liable to be neglected. Many good specialists are purely clinicians ; many others, really distinguished in some branch of science connected with special disease, are quite innocent of others. Perhaps from few experts in consultation would we expect familiarity with such a monograph as Bert's on respiration, or with the complex laws on diffusion of gases. It would not be difficult to name neurologists distinguished in experimentation, but who have never mounted a section of nerve tissue for the microscope. It would not be impossible to cite skilful surgeons, most ingenious in mechanical contrivance, who are unaware of the pathological anatomy of the tissues they divide or remove.

Great as are the difficulties arising from the great increase in the mass of knowledge, there are many palliations. The perfected machinery for sifting, analyzing, classifying, and sorting this knowledge, renders it ten times as accessible and comprehensible as was formerly one tenth part as much. Many general principles have been established, which link together, in lucid unity, hosts of details, once unconnected, unintelligible, and hence most difficult to remember. The classical body of doctrine in medicine, whose possession is essential to the practice of medicine (*secundum artem*), is really more accessible to-day than at epochs when some narrow system professed to crush it into a portable nutshell. Finally, the advance of science and of scientific method exacts, that who would claim to contribute to further progress must concentrate himself much within the limits of any conventional specialty. No one disease, no one organ may be compassed by a

single observer: happy he who may, by laborious research, contribute to the solid establishment of a single detail of the truth. For such work it is, theoretically at least, as easy for the general, as for the special physician to withdraw a certain portion of his attention from practice. Neither can hope that his research can benefit more than a small proportion, if any, of his own patients. The one must, as much as the other, depend on the collaboration and unconscious coöperation of a thousand workers. For both, are needed not only clinical observations, but the mental ability to utilize observations,—a mental training in the art of handling large masses of ideas. For both, if we may judge from European examples, the personal experience to be gained in private practice is insufficient; to both, should classified hospitals be open as the true field for pathological study.





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